

REMARKS

Claims 1-22 are pending in the present application. Claims 1-20 have been examined, and new claims 21 and 22 have been added for consideration. The Examiner maintains the rejection of claims 1-14 and 17-20, and provides new grounds for rejection of claims 15 and 16. Applicants address the present actions as follows.

Claims 1-14 and 17-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhat et al. (U.S. Pat. No. 5,207,864) in view of Cohn et al. (U.S. Pat. No. 7,276,789). Applicants traverse this rejection.

As a preliminary matter, applicants submitted a Declaration under 35 U.S.C. § 132 (filed with Response F on December 17, 2009). MPEP § 716.01 states that “[e]vidence traversing rejections, when timely presented, must be considered by the examiner whenever present. All entered affidavits, declarations, and other evidence traversing rejections are acknowledged and commented upon by the examiner in the next succeeding action.” The Examiner has neither acknowledged nor commented on applicants’ timely-filed declaration. Accordingly, the present action is improper for at least this reason.

Additionally, applicants hereby incorporate the remarks of previously-filed Response F as they apply to claims 1-14 and 17-20, and reassert that the claims should be allowed since the hot isostatic pressing disclosed by Cohn is not functionally equivalent to the uniaxial pressure application disclosed in Bhat. As discussed in the previous Response and paragraph 16 of the § 132 Declaration filed 12/17/2009, hot isostatic pressing produces different stress fields in the substrates than uniaxial pressing. Thus,

the two methods for applying pressure to semiconductor substrates are fundamentally different, and should not be treated as functional equivalents. The remarks of Response F should have been considered in light of the § 132 Declaration filed 12/17/2009, to advance prosecution and to clarify any disputed issues prior to appeal.

Claims 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bhat and Cohn in view of Baker et al. (U.S. Patent No. 6,189,766). Claims 15 and 16 ultimately depend from independent claim 1, and thus incorporate all of the features of claim 1, plus additional features. Accordingly, applicants traverse the rejection of claims 15 and 16 for the reasons discussed above regarding claim 1, and because Baker fails to remedy the above-identified deficiencies of the rejection of claim 1. Specifically, Baker teaches that a hot isostatic pressure bonding apparatus includes a spring actuation mechanism imparting force on a to a spring which forces a first layer and second layer together inside a high-pressure chamber (Baker, col. 6, lns. 40-42). Thus, Baker teaches that uniaxial pressure, in addition to isostatic pressure, is needed for successful bonding, and not that hot isostatic pressing is functionally equivalent to uniaxial pressure.

Finally, applicants present new claims 21 and 22 for consideration, and believe the claims to be allowable. Claims 21 and 22 depend from independent claims 1 and 19, respectively, and are allowable for at least the reasons discussed above with respect to claims 1 and 19. Additionally, the cited references, alone or in combination, fail to disclose the use of solely isostatic pressure where the wafers are not encapsulated. As discussed above, Bhat teaches that uniaxial pressure is used to form a bond between

wafers (see Bhat col. 3, lns. 43-46). Baker teaches that uniaxial pressure is provided through a spring actuation mechanism and spring to hold force a first layer towards a second layer (Baker col. 6, lns. 40-42). Further, Cohn teaches that hot isostatic pressing involves placing the substrate pair in a high-temperature bag (col. 10, lns. 10-12). Thus, no combination of the cited references teaches the use of solely isostatic pressure without encapsulating the wafers, as recited in claims 21 and 22. For this additional reason, applicant again asserts that new dependent claims 21 and 22 are allowable.

For all the foregoing reasons, applicants submit that this application is in condition for allowance, which is respectfully requested. The Examiner is invited to contact the undersigned attorney if an interview would expedite prosecution.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By 

Kevin T. Bastuba
Registration No. 59,905

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300 South Wacker Drive
Suite 2500
Chicago, Illinois 60606
(312) 360-0080
Customer No. 24978